

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/41387

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : D02G 03/02

US CL : 57/6

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 57/3, 6, 9, 22, 23, 210-212, 231, 258, 264, 297, 311

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST: Derwent, EPO, JPO, IBM

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	6,363,704 B2 (Kim) 02 April 2002 (02.04.2002), Abstract, all figures	1-18
Y	US 460,407 A (Thompson) 29 September 1891 (29.09.1891), Figures 1-5	1-18
Y	US 4,131,759 A (Felkel) 26 December 1978 (26.12.1978), Detail 52; Column 6, lines 49-54	3-6, 12-15
Y	US 4,191,009 A (Thomson) 04 March 1980 (04.03.1980), Column 2, lines 42-45	8, 16
A	US 6276120 B1 (Adriaensen et al) 21 August 2001 (21.08.2001), see entire document	1-18
A	US 5,461,850 A (Bruyneel et al) 31 October 1995 (31.10.1995), see entire document	1-18
Y	US 4,445,593 A (Coleman et al) 01 May 1984 (01.05.1984), see entire document	1-18
A	US 5,113,039 A (Guipe et al) 12 May 1992 (12.05.1992), see entire document	1-18
A	US 4,428,992 A (Street) 31 January 1984 (31.01.1984), see entire document	1-18



Further documents are listed in the continuation of Box C.



See patent family annex.

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document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

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Date of the actual completion of the international search

05 January 2005 (05.01.2005)

Date of mailing of the international search report

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Authorized officer

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C. (Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,908,715 A (Spiessens) 30 September 1975 (30.09.1975), see entire document	1-18
A	US 3,017,739 A (Gathman) 23 January 1962 (23.01.1962), see entire document	1-18